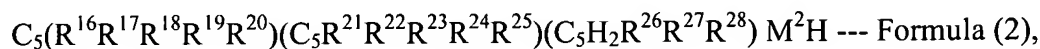


This listing of claims will replace all prior versions, and listings, of claims in the application:

**IN THE CLAIMS:**

1. (Cancelled)

2. (Currently Amended): A ~~The~~ transition metal compound represented by the following general formula (2) ~~as claimed in Claim 1:~~



wherein  $\text{C}_5\text{R}^{16}\text{R}^{17}\text{R}^{18}\text{R}^{19}\text{R}^{20}$ ,  $\text{C}_5\text{R}^{21}\text{R}^{22}\text{R}^{23}\text{R}^{24}\text{R}^{25}$  and  $\text{C}_5\text{H}_2\text{R}^{26}\text{R}^{27}\text{R}^{28}$  denote

cyclopentadienyl groups or substituted cyclopentadienyl groups, respectively;

$\text{R}^{16}$ ,  $\text{R}^{17}$ ,  $\text{R}^{18}$ ,  $\text{R}^{19}$ ,  $\text{R}^{20}$ ,  $\text{R}^{21}$ ,  $\text{R}^{22}$ ,  $\text{R}^{23}$ ,  $\text{R}^{24}$ ,  $\text{R}^{25}$ ,  $\text{R}^{26}$ ,  $\text{R}^{27}$  and  $\text{R}^{28}$  are any one of hydrogen atom, a hydrocarbon group ~~groups each~~ having a substituent of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different ~~from one another~~;

among them,  $\text{R}^{16}$ ,  $\text{R}^{17}$ ,  $\text{R}^{18}$ ,  $\text{R}^{19}$ ,  $\text{R}^{20}$ , or  $\text{R}^{21}$ ,  $\text{R}^{22}$ ,  $\text{R}^{23}$ ,  $\text{R}^{24}$ ,  $\text{R}^{25}$ , or  $\text{R}^{26}$ ,  $\text{R}^{27}$ ,  $\text{R}^{28}$  can be bonded to one another forming a cyclic hydrocarbon group (including a polycyclic structure);

~~Provided~~ provided that at least one of  $\text{R}^{16}$ ,  $\text{R}^{17}$ ,  $\text{R}^{18}$ ,  $\text{R}^{19}$ ,  $\text{R}^{20}$ ,  $\text{R}^{21}$ ,  $\text{R}^{22}$ ,  $\text{R}^{23}$ ,  $\text{R}^{24}$ ,  $\text{R}^{25}$ ,  $\text{R}^{26}$ ,  $\text{R}^{27}$  and  $\text{R}^{28}$  is a substituent group other than hydrogen atom; and

$\text{M}^2$  denotes a transition metal of group 4 of the periodic table.

3. (Original): The transition metal compound as claimed in Claim 2, wherein  $\text{R}^{26}$ ,  $\text{R}^{27}$  and  $\text{R}^{28}$  are bonded to adjacent carbons at the 1-position, 2-position and 3-position.

4. (Currently Amended): The transition metal compound represented by the following general formula (3) as claimed in Claim [[1]] 2;



wherein  $(C_5H_2R^{29}R^{30}R^{31})$ ,  $(C_5H_2R^{32}R^{33}R^{34})$  and  $(C_5H_2R^{35}R^{36}R^{37})$  denote

cyclopentadienyl groups or substituted cyclopentadienyl groups, respectively;

$R^{29}$ ,  $R^{30}$ ,  $R^{31}$ ,  $R^{32}$ ,  $R^{33}$ ,  $R^{34}$ ,  $R^{35}$ ,  $R^{36}$  and  $R^{37}$  are any one of hydrogen atom, a hydrocarbon ~~groups each group~~ having 1 to 30 carbon atoms or an organosilicon ~~groups group~~ having a substituent of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different ~~from one another~~,

among them,  $R^{29}$ ,  $R^{30}$ ,  $R^{31}$ , or  $R^{32}$ ,  $R^{33}$ ,  $R^{34}$ , or  $R^{35}$ ,  $R^{36}$ ,  $R^{37}$  can be bonded to one another forming a cyclic hydrocarbon group (including a polycyclic structure);

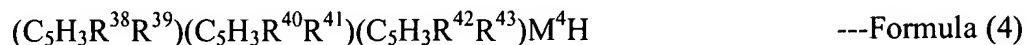
provided that at least one of  $R^{29}$ ,  $R^{30}$ ,  $R^{31}$ ,  $R^{32}$ ,  $R^{33}$ ,  $R^{34}$ ,  $R^{35}$ ,  $R^{36}$  and  $R^{37}$  is a substituent group other than hydrogen atom; and

$M^3$  denotes a transition metal of group 4 of the periodic table.

5. (Currently Amended): The transition metal compound as claimed in Claim 4, wherein  $R^{29}$ ,  $R^{30}$ ,  $R^{31}$ [[;]], or  $R^{32}$ ,  $R^{33}$ ,  $R^{34}$ , or  $R^{35}$ ,  $R^{36}$ ,  $R^{37}$  are bonded to adjacent carbon atoms at the 1-position, 2-position and 3-position of the respective cyclopentadienyl group.

6. (Currently Amended): The transition metal compound as claimed in Claim 5, wherein the three substituted ~~cyclopentadienyl~~ cyclopentadienyl groups of  $(C_5H_2R^{29}R^{30}R^{31})$ ,  $(C_5H_2R^{32}R^{33}R^{34})$  and  $(C_5H_2R^{35}R^{36}R^{37})$  ~~are~~ have the same ~~in~~ structure.

7. (Currently Amended): The transition metal compound represented by the following general formula (4) as claimed in Claim [[1]] 2:



wherein  $(C_5H_3R^{38}R^{39})$ ,  $(C_5H_3R^{40}R^{41})$  and  $(C_5H_3R^{42}R^{43})$  denote cyclopentadienyl groups or substituted cyclopentadienyl groups, respectively:

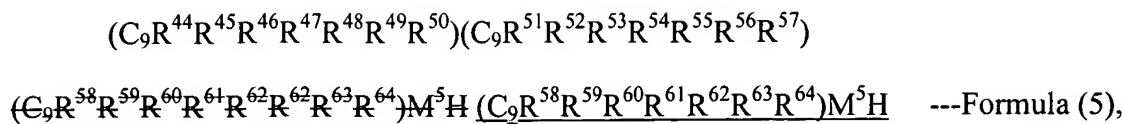
$R^{38}$ ,  $R^{39}$ ,  $R^{40}$ ,  $R^{41}$ ,  $R^{42}$  and  $R^{43}$  are any one of hydrogen atom, a hydrocarbon ~~groups each group~~ having 1 to 30 carbon atoms or an organosilicon ~~groups each group~~ having a substituent of a hydrocarbon having 1 to 30 atoms, which are the same or different ~~from one another~~;

among them,  $R^{38}$ ,  $R^{39}$ , or  $R^{40}$ ,  $R^{41}$ , or  $R^{42}$ ,  $R^{43}$  can be bonded to one another forming a cyclic hydrocarbon group (including a polycyclic structure);

provided that at least one of  $R^{38}$ ,  $R^{39}$ ,  $R^{40}$ ,  $R^{41}$ ,  $R^{42}$  and  $R^{43}$  is a substituent group other than hydrogen atom; and  $M^4$  denotes a transition metal of group 4 of the periodic table.

8. (Currently Amended): The transition metal compound as claimed in Claim 7, wherein the three substituted cyclopentadienyl ~~cyclopentadienyl~~ groups of  $(C_5H_3R^{38}R^{39})$ ,  $(C_5H_3R^{40}R^{41})$  and  $(C_5H_3R^{42}R^{43})$  have ~~are~~ the same ~~in structures~~ structure.

9. (Currently Amended): The transition metal compound represented by the following general formula (5) as claimed in Claim [[1]] 2;



wherein  $(C_9R^{44}R^{45}R^{46}R^{47}R^{48}R^{49}R^{50})$ ,  $(C_9R^{51}R^{52}R^{53}R^{54}R^{55}R^{56}R^{57})$  and  $(C_9R^{58}R^{59}R^{60}R^{61}R^{62}R^{63}R^{64})$  denote indenyl groups or substituted indenyl groups, respectively;

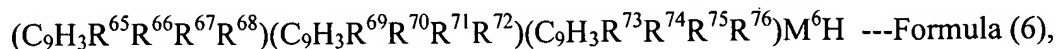
$R^{44}$  to  $R^{64}$  are any one of hydrogen atom, a hydrocarbon groups each group having 1 to 30 carbon atoms or an organosilicon groups each group having a substituent of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different from one another,

among them  $R^{44}$  to  $R^{50}$  or  $R^{51}$  to  $R^{57}$  or  $R^{58}$  to  $R^{64}$  can be bonded to one another forming a cyclic hydrocarbon group (including a polycyclic structure);

provided that at least one of  $R^{38}$ ,  $R^{39}$ ,  $R^{40}$ ,  $R^{41}$ ,  $R^{42}$  and  $R^{43}$  is a substituent group other than hydrogen atom; and

$M^5$  denotes a transition metal of group 4 of the period table.

10. (Currently Amended): The transition metal compound represented by the following general formula (6) as claimed in Claim [[1]] 2:



wherein  $(C_9H_3R^{65}R^{66}R^{67}R^{68})$ ,  $(C_9H_3R^{69}R^{70}R^{71}R^{72})$  and  $(C_9H_3R^{73}R^{74}R^{75}R^{76})$  denote indenyl groups or substituted indenyl groups, respectively;

$R^{65}$  to  $R^{76}$  are any one of hydrogen atom, a hydrocarbon groups each group having 1 to 30 carbon atoms or an organosilicon groups each group having a substituent

of a hydrocarbon having 1 to 30 carbon atoms, which are the same or different from one another;

among them,  $R^{65}$  to  $R^{68}$ ,  $R^{69}$  to  $R^{72}$  and  $R^{73}$  to  $R^{76}$  can be bonded to carbon atoms at the 4-position, 5-position, 6-position and 7-position, respectively, of the indenyl groups (in the part of the six-membered ring) and they can be bonded to one another forming cyclic hydrocarbon groups (including a polycyclic structure); and

$M^6$  denotes a transition metal of group 4 of the periodic table.

11. (Currently Amended): The transition metal compound as claimed in Claim 10, wherein the three substituted indenyl groups of  $(C_9H_3R^{65}R^{66}R^{67}R^{68})$ ,  $(C_9H_3R^{69}R^{70}R^{71}R^{72})$  and  $(C_9H_3R^{73}R^{74}R^{75}R^{76})$  have are the same in structure.

12. (Currently Amended): The transition metal compound as claimed in Claim ~~[[1]]~~ 2, wherein the transition metal of group 4 of the period table is Zr.

13. (Currently Amended): A catalyst for olefin polymerization, which comprises the transition metal compounds compound as claimed in Claim ~~[[1]]~~ 2, an organoaluminum oxy compound and/or a compound which can form ion pairs with the transition metal compound.

14. (Original): The catalyst for olefin polymerization as claimed in Claim 13, wherein the organoaluminum oxy compound is methyl aluminoxane.

15. (Previously Presented): A solid catalyst for olefin polymerization, wherein the catalyst as claimed in Claim 13 is supported on a carrier.

16. (Currently Amended): A solid catalyst for olefin polymerization, wherein the transition metal ~~compounds~~ compound as claimed in Claim ~~[[1]]~~ 2 is supported on a layered silicate.

17. (Currently Amended): A method for producing a polyolefin, wherein an olefin is polymerized in the presence ~~under the existence~~ of the catalyst as claimed in Claim 13.

18. (Currently Amended): The method for producing a polyolefin as claimed in Claim 17, wherein the olefin polymerization is homopolymerization of ethylene or copolymerization of ethylene and an  $\alpha$ -olefin.